APPENDIX D - RESPONSE TO COMMENTS
KINROSS GOLD CORPORATION

The Department received comments on the proposed permit from the Permittee, the Center for Science in Public Participation, and the Okanogan Highlands Alliance. The following pages contain the comment letters, and the Department's response to each comment. The Department considered these comments and made changes in the final permit as determined appropriate.

COMMENTS TO SWDP 8033, KINROSS GOLD CORPORATION	RESPONSES
 Water Quality Permit Coordinator Washington Department of Ecology 4601 N. Monroe Spokane, WA 99205-1295 RE: Application ST 8033 Kettle River Operations (KRO) wishes to provide the following comments on the Washington Department of Ecology's (Ecology's) proposal to renew the State Waste Discharge (SWD) permit, Application No. ST 8033 for the Kettle River Operations in Ferry County, WA. The fact sheet documents that KRO has operated for 14 years in overall compliance with its State Waste Discharge Permit. Where in the course of operations information has become available that has indicated potential issues, KRO has worked with Ecology to implement operational changes, be it modifying water management practices or accelerating the reclamation schedule where possible. KRO would like to reiterate this commitment to the environment and the community. The Company recognizes that maintenance of environmental quality is vital to the Company's existence, progress, and continued development. The Company will continue to maintain high environmental standards limited only by technical and economic feasibility. The Company has and will take positive action to protect the safety of its workers, conserve natural resources, and minimize the impact of its activities on the environment through diligent application of appropriate technology and responsible conduct at all stages of exploration, mine development, mining, mineral processing, decommissioning, and reclamation. Recent exploration successes will allow the Company to continue operations in Republic and the vicinity, extending the tradition of mining that has been a cornerstone of the regional economy since the 1890s. KRO will continue to strive to be responsive to the needs and concerns of the community, our workers, Ecology and other agencies, and other interested stakeholders. **1** In particular, KRO agrees that a thorough study of the hydrology of the Key East waste rock storage pile and an evaluation of feasible alternatives is warranted. This waste rock facility was designed, operated, and reclaimed with a detailed plan to prevent the release of heavy metals and acidic drainage. While the plan appears to be working as approved – monitoring has detected no metals in levels of concern, and drainage continues to be circumneutral with high levels of alkalinity – additional measures may be available to address secondary parameters such as sulfate and TDS that are neutralized products of 	Note: The proposed permit listed 'Echo Bay Minerals Company' as the Permittee. Since that time, Kinross Gold Corporation has taken over control of the Kettle River Operations; and Echo Bay Minerals no longer exists as a company. The final permit and fact sheet has been updated to reflect 'Kinross Gold Corporation' as the new permittee. 1. A parameter of concern for the Key East waste dump would also include nitrate. Although the wasterock facilities may have been operating as designed, this has not prevented pollution of State ground water, and numeric criteria to be exceeded for nitrates, TDS, and sulfate.

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1 (con'd) pyrite oxidation. KRO will work with Ecology to identify available and reasonable technologies to maintain appropriate beneficial uses at that location. In regard to the proposed permit, it is notable that this is the first permit modification since 1992. Since that time, KRO has twice made timely requests for renewal, in 1994 and 1999, and Ecology has twice extended the existing permit by administrative decision. At Ecology's request, KRO submitted an updated renewal application in 2000, 4 years before the 1999 extension of the current permit expires (December 8, 2004). In the three years since KRO's application, Ecology has accepted a hydrologic evaluation of the Key Mill Tailings Facility Area, approved a 12 ft. Phase IV lift on the tailings, approved expansion of the K2 waste rock storage pile, and accepted a bond increase calculation prepared by KRO. Additional public review and evaluation of the potential impacts of mining operations by KRO has occurred over the life of the project through SEPA and NEPA analysis conducted in 1988 (Ecology), 1992 (Ecology), 1994 (BLM), and 1994 (Ecology). Ecology has also approved tailings designs for construction and expansion on four occasions (1988, 1992, 1995, 2001). The proposed permit renewal sets a new compliance standard for the project by applying estimated background concentrations as enforcement limits. There are several reasons why this change in approach lacks regulatory and technical basis: **2** 1) Setting background concentrations as compliance limits in practice amounts to a ***non-degradation*** standard, since the permit would not allow any change in groundwater quality. This would appear to contradict the State policy of ***anti-degradation***, which requires a technology-based determination that all appropriate measures have been taken to maintain beneficial uses, as near the natural ground water quality "as practical" (WAC173-200-050(3)(ii)). Ecology has not evaluated whether it is technologically "practical" to meet the background limits and time frame identified in the proposed permit renewal. **3** 2) There are numerous other types of facilities throughout Washington State where Ecology has taken a much different approach to implementing the anti-degradation policy for regulation of industries outside metal mining and milling. The first tier of the anti-degradation policy is to prevent degradation that would interfere with or become injurious to beneficial uses (WAC 173-200-030(2)(a)); the regulations clearly state that drinking water is the highest beneficial use, and establish Ground Water Quality Standards (GWQS) to protect that use (see WAC 173-200-040(1)(a) and (b)). Examples where Ecology has used the GWQS as the basis for permit limits include the State Industrial Stormwater General Permit (p. 32); Sand and Gravel Permit (p. 21;); and several individual waste discharge permits (List Attachment A). It is unclear why Ecology is now proposing to apply a different approach to Kettle River Operations. **4** 3) The heart of the anti-degradation policy is the requirement that all known available and reasonable treatments (AKART) will be applied. Through its Kettle River Operations 2 November 14, 2003 Comments on ST 8033 Renewal	2. The intent of the Ground Water Quality (GWQ) Standards is to protect background water quality to the extent practical, rather than to allow degradation of ground water quality to the criteria. Limited degradation is allowed, as long as both all known, available, and reasonable methods of prevention, control, and treatment (AKART) is applied to the activity/discharge; and the activity/discharge is in the 'overriding public interest' (see Chapter 173-200-030). The proposed permit set compliance limits for selected wells based on preactivity ground water quality; and required the Permittee to review and update all known, available, and reasonable methods of prevention, control, and treatment alternatives for the affected wells. The Department acknowledges the uncertainty of meeting preactivity groundwater limits for some portions of the operations (specifically for wells K2-2, TP-1, TP-2, and KW1-A). Therefore, these final limits will be removed from the final permit. However, the goal of the GWQ Standards would still be to meet these 'preactivity' final limits as contained in the proposed permit. The final permit retains the interim limits for these wells, to maintain existing ground water quality. However, for other site wells, the preactivity/background water quality appear attainable and final limits will be retained in the issued permit. These wells include K2-1, TP-3, LF-1, LF-2, LF-4, LF-5, LF-6, and LF-8. 3. Comment noted. However, the Department believes this permit is consistent with the GWQ Standards and the Department's implementation guidance. 4. Again, the goal of the GWQ Standards is to protect to background/preactivity ground water quality. As explained in comment #2, ground water limits based on preactivity ground water data for wells K2-2, TP-1, TP-2, and KW1-A have been removed from the permit.

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4 (con'd) extensive permitting and SEPA analysis of this project, Ecology has in effect reviewed and approved implementation of treatments that were reasonably available at each stage of project life, including as recently as 2001 approval of the tailings Phase IV lift and 2003 expansion of the K2 waste rock stockpile. KRO is committed to continuous environmental improvement, and there may be additional reasonable technologies that have become available over the course of the mine life, but it is arbitrary and not technically sound to create new limits before that evaluation has been made. This creates a situation where a facility that has been designed, constructed, and operated with full approval from Ecology may suddenly become non-compliant even though the facts on the ground have not changed. **5** 4) In fact, SEPA and NEPA analyses conducted over the life of the project have determined that some changes in water quality are predictable and acceptable. The 1992 Ecology SEPA analysis for example clearly states that the GWQS were used by Ecology to determine whether degradation of groundwater quality impacts is significant (Ecology 1992 p. 4-18). See Attachment B for specific citations. Through the analysis of alternatives and impacts, public notification and comment carried out under SEPA, Ecology has already determined that the project meets the "public interest" criteria in WAC 173-200-030(2)(c)(i); the analysis would justify GWQS as the appropriate permit limits. At this point, to change course and redefine "compliance" as meeting background concentrations applies a non-degradation standard that contradicts Ecology's previous determinations under SEPA. **6** 5) In the larger picture, Washington law recognizes that balanced environmental regulation of metals mining is in the best interests of the citizens of the state: **RCW 78.44.010. Legislative Finding.** The legislature recognizes that the ***extraction of minerals by surface mining is an essential activity*** making an important contribution to the economic well-being of the state and nation. ***It is not possible to extract minerals without producing some environmental impacts***. At the same time, comprehensive regulation of mining and thorough reclamation of mined lands is necessary to prevent or mitigate conditions that would be detrimental to the environment and to protect the general welfare, health, safety, and property rights of the citizens of the state. Surface mining takes place in diverse areas where the geologic, topographic, climatic, biologic, and social conditions are significantly different, and reclamation specifications must vary accordingly. Therefore, the legislature finds that a balance between appropriate environmental regulation and the production and conservation of minerals is in the best interests of the citizens of the state [1993 c 518 § 2; 1970 ex.s. c 64 § 2, emphasis added] **7** 6) The Pollution Control Hearings Board (PCHB) has also confirmed that it would be unreasonable to expect that background water quality conditions will remain unchanged during mining operations:	5. The Department finalized it's groundwater implementation guidance in 1996, prior to the 1992 EIS for the K2 project. Both the GWQ Standards and the Department's implementation guidance do not call for protection of ground water quality to criteria values, but rather protection to background, or preactivity, quality. Therefore, incorporating limits at the criteria values would not be appropriate. 6. Comment noted. 7. Comment noted.

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7 (cond') Water quality regulations recognize the impact of human activity and provide means to ***allow for reasonable compliance*** through measures such as mixing zones, WAC 173-201A-100, compliance schedules, WAC 173-201A-140, and, as in this case, alternate points of compliance, WAC 173-201A-060. ***It would be seemingly impossible to undertake any type of mining or construction without causing some disturbance of soils that might lead to a violation of water quality standards***. It is therefore reasonable to establish time periods and boundaries within which mining activity must come into compliance with applicable standards. [PCHB No.97-146 numbered paragraph 63, emphasis added]	
8 7) Not only does the proposed permit lack an evaluation of whether it is technically "practical" to meet the proposed permit limits, the determination of background may lack technical basis. For example, Ecology uses different time periods for each parameter for a given well when determining background levels. At a single well TP-2 Ecology uses 4 years (n=20 samples) for nitrates, less than 1 year for sulfate (n=8), and under 2 years for TDS (n=12). There is no obvious technical basis for Ecology to arbitrarily change the "pre-activity" period for each well depending on the parameter. This is the type of issue that may be more comprehensively addressed under a full AKART study.	8. Different time periods were indeed used in determining background/preactivity ground water quality. For a particular well and constituent, the time frame selected was based on values that did not exhibit an 'increasing trend'. With this analyses, the data did produce different time periods for background ground water quality determinations for different parameters.
9 It is important to put these comments into perspective, as KRO has not and is not asking to change or harm beneficial uses or otherwise violate the State water quality standards. As documented in the fact sheet, there continues to be no noticeable difference in water quality of either the North Fork Sanpoil River or Kettle River upstream vs. downstream of our operations. There is no detectable impact on North Fork Sanpoil River from reclaimed operations at Overlook or the Key Project.	9. There are no noticeable differences in the North Fork of the Sanpoil and Kettle River upstream and downstream of the respective operations. As a clarification, this is not the case for ground water quality for selected wells where water quality criteria have been exceeded. Additionally, surface water quality (as measured by surface water sites SW-12 and SW-16) does appear to be impacted from the Key Project.
10 Perhaps the most compelling evidence that waters of the State have been protected is the fact that KRO continues to get its drinking water from wells located on its property directly downstream of the tailings pond and the K2 mine; recent water quality analyses for these wells are included in Attachment C.	10. The fact that the site's drinking water well meets applicable criteria does not indicate that waters of the State have been protected. The site's drinking water wells were likely constructed in a deeper aquifer. The State's GWQ Standards require protection of the uppermost aquifer beneath an activity/discharge as close to the activity as technically, hydrogeologically, and geographically feasible.
11 At issue is the fact that by setting the estimated background concentrations as compliance limits before conducting the technical analysis of whether it is "practical" to meet those limits, Ecology has set a non-degradation standard that may create situations of possible non-compliance even though the project has implemented the highest environmental standards and reasonable treatments available at each stage of project life. The Fact Sheet allows that the enforcement limits included in this permit, after hydrologic and engineering study, may be shown to be unattainable (Fact Sheet p. 15, numbered item 3); however, KRO believes a more technically sound approach, fully protective of state water quality standards, would be as follows:	11. See response to comment #2. The compliance limits set at preactivity ground water quality have been removed from the final permit.
12 1. The renewal permit should not include long-term enforcement limits until the technical basis is completed under an AKART. Once appropriate, practical long-term enforcement limits and time frames for meeting those limits have been identified in the hydrology/AKART study, they can be incorporated as a permit	12. See response to comment #2.

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12 (con'd) modification or renewal and will serve as targets once operations end and reclamation is complete.

13 2. Consistent with the SEPA analysis conducted for the project, the GWQS should be used as interim permit limits until the AKART study can identify the appropriate concentrations and time frames for meeting long-term water quality goals.

14 3. As outlined by Ecology in the proposed permit renewal, the AKART study should also address priority areas, where interim limits are above GWQS, such as evaluation of available, reasonable technologies that may be applicable at the Key East Waste Rock Pile.

KRO believes this approach meets the letter and intent of the anti-degradation policy, in that existing beneficial uses are protected during the interim operating period by using GWQS as permit limits, and long-term practical and attainable enforcement limits will be established, based upon a thorough technical study of all known available and reasonable technologies.

In short, KRO is simply recommending that long-term limits be set after the appropriate studies have been completed.

Based on our recommendations above and adjusting limits for data through October 2003, the new interim limit table would look similar to Table 1 below:

15

Interim Ground Water Quality Enforcement Limits (mg/L)*				
Site Location	**Well**	**(as N)**	**Sulfate**	**TDS**
K2 Mine	K2-1	10	250	500
	K2-2	10	280	921
Key Mill	TP-1	10	250	906
	TP_2	19.4	250	798
	TP-3	10	250	500
Key Open Pits	KW1-A**	71.4	788	1624
Lamefoot Mine	LF-1	10	250	500
	LF-2	10	250	500
	LF-4	10	250	500
	LF-5	10	250	500
	LF-6	10	250	500
	LF-8	10	250	500
	LF-12	27.3	250	734

*Pertinent limits need to be recalculated using data available through October 2003.
**To be adjusted for the seasonality of the data.

More detailed comments are listed in the attached Table 1 (Fact Sheet) and Table 2 (Permit). For example, in many areas where Ecology has noted increasing trends, data

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13. Both the GWQ standards and the Department's implementation guidance do not call for protection of ground water quality to criteria values, but rather protection to background, or preactivity, quality. Therefore, incorporating limits at the criteria values would not be appropriate.

14. Comment noted.

15. The Department has recalculated ground water compliance limits with data through March, 2004. The final ground water interim and final compliance limits are as follows:

INTERIM GROUND WATER QUALITY ENFORCEMENT LIMITS (mg/L)				
Site Location	Well	NO_3+NO_2 (as N)	Sulfate	TDS
K2 Mine	K2-2	6.1	292	941
Key Mill	TP-1	7.7	204	894
	TP-2	17.5	225	780
Key Open Pits	KW-1A	71.4	816	1,676
Lamefoot Mine	LF-12	27.4	185	731

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over the past three years (i.e., the record retention period under the permit) actually show decreasing trends. Tables 2 in particular indicates specific changes recommended by KRO to implement the general comments and strategy discussed above.

In closing, we again emphasize that as a Company our goal is to maintain the highest environmental standards, including full compliance with our operating permits. These comments are submitted as a constructive effort to define a practical approach that meets the needs of all stakeholders, not the least of which are our workers and the local community.

Kettle River Operations

Bob Taylor
General Manager

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15 (con'd)

FINAL GROUND WATER QUALITY ENFORCEMENT LIMITS (mg/L)				
		Final Limitations		
Site Location	Well	NO_3+NO_2 (as N)	Sulfate	TDS
K2 Mine	K2-1	0.59	60	371
Key Mill	TP-3	2.5	46	318
Lamefoot Mine	LF-1	1.25	248	685
	LF-2	0.62	362	916
	LF-4	0.53	310	718
	LF-5	2.26	210	576
	LF-6	-	180	496
	LF-8	4.67	212	635

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TABLE 1
COMMENTS REGARDING FACT SHEET

	No.	Ref.	Comment
16	1.	p. 1 ¶1	The Fact Sheet indicates that the permit will allow discharge of wastewater to waters of the State. The Legal Notice (PNOD), on the other hand, indicates the permit would not allow a discharge. Not only is the contradictory language confusing, KRO believes the "no discharge" language implies a non-degradation standard that is inconsistent with the State anti-degradation policy and SEPA determinations for this project.
17	2.	p. 1	Although the Fact Sheet indicates that the only discharge is at the tailings pond, the Permit in fact establishes enforcement limits for all KRO facilities, including K2, Lamefoot, Key Project, and the general site facilities at the Key Mill and Tailings Facility.
18	3.	p. 3 ¶2	Ecology notes that site activities are covered by the sand & gravel and baseline general stormwater NPDES permits. These permits refer to the Ground Water Quality Standards (GWQS), rather than anti-degradation, for groundwater enforcement limits. For example, the sand & gravel permit notes that discharges of water with elevated TDS to groundwater are of concern only if the GWQS of 500 mg/L is exceeded, with no discussion of background as the standard. This should be considered in setting enforcement limits under ST 8033.
19	4.	p. 5 ¶5	sp. "rhyodacite"
20	5.	p. 6 ¶4	The existing permit ST 8033, and the proposed renewal, require that monitoring records be retained for 3 years. Over the past three years, K2-2 nitrates show a decreasing trend, below the GWQS of 10 mg/L. Sulfate concentrations are also below the GWQS of 250 mg/L (with the exception of one result of 255 mg/L). There is also a drinking water supply well, located on KRO property downgradient of and equidistant between K2-1 and K2-2, which generally meets drinking water standards (Attachment C).
21	6.	p. 6 ¶6-8	The "upper ground water level" monitored by TP-1 and TP-2 is a localized perched water table that was quite limited in area (215 ac) and thickness (4-27 feet) before construction of mill & tailings facilities. A large part of this perched aquifer was excavated for construction of the tailings, and the facility has in effect covered much of the recharge zone (94 ac), and the remaining recharge area is the mill facility, parking lot, septic system, runoff sump, and storage yards. The fact sheet notes lowered water levels in this perched water table due to construction of the tailings facility. This perched table is believed to report to the lower aquifer monitored by TP-3 and the production wells.

16. For clarification, the final permit both regulates discharges and activities that may impact ground water quality.

17. The proposed and final permit regulates not only discharges, but also site activities that may adversely impact ground water quality.

18. Again, the Department believes the final permit is consistent with GWQ Standards and Department's implementation guidance, which do not allow degradation of ground water quality to criteria values.

19. This spelling error is corrected in the final fact sheet.

20. The final permit does require that records are retained for three years, longer during the course of any unresolved litigation or when requested by the Department. The Department has reexamined trends for nitrate values for K2-2 since 1999. There is not a statistically significant decreasing trend for the nitrate and sulfate data for this well. As discussed earlier, using the drinking water well for a compliance well for the site would not be appropriate.

21. Comment noted.

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TABLE 1
COMMENTS REGARDING FACT SHEET

	No.	Ref.	Comment
22	7.	p. 6 ¶9	Over the past three years, TP-1 shows decreasing trends for all three parameters (TDS, nitrate, sulfate); nitrate and sulfate are below GWQS. TP-2 shows decreasing trends for TDS and sulfate, at or below GWQS, and nitrate concentrations are not increasing. TP-3 shows no change over the past three years in any of the parameters, all below GWQS. In addition, the production wells for the facility are located on KRO property just downgradient of TP-1. These wells meet all of the drinking water standards (Attachment C), and may be an appropriate point of compliance, given the fact that they are actually used as a source of drinking water.
23	8.	p. 7 ¶6	As with other wells, review of the past three years of data (i.e., the record retention period under the permit) indicates concentrations in KW1-A may be stable or decreasing, especially for nitrate. It is also important to note that alkalinity has not decreased, indicating the limestone encapsulation of sulfide materials continues to neutralize any sulfide oxidation products. The observed levels of sulfate and TDS are consistent with such neutralization reactions.
24	9.	p. 8 ¶4	LF-6 and 8 are also directly adjacent to SH21 and may reflect periodic inputs from other sources. Recent sampling results (beginning in 2003) at LF-12 indicate decreasing trends in all parameters and may reflect final clean up and reclamation completed at the waste rock / ore stockpile adjacent to the well.
25	10.	p. 9 ¶3-4	The Overlook Mine has been completely reclaimed and is being used as a cow pasture. It is important to note that there is no noticeable difference between water quality at SW-3 and the next downstream station on the North Fork Sanpoil River SW-4.
26	11.	p. 10 ¶2	There is no evidence of water quality impacts to North Fork Sanpoil River at any monitoring stations downstream of the Key Project (SW-3, SW-4, SW-7).
27	12.	p. 10 ¶6	It is notable that this is the first permit modification since 1992. Since that time, KRO has twice made timely requests for renewal, in 1994 and 1999, and Ecology has twice extended the existing permit by administrative decision. The existing permit extension is valid through December 8, 2004.
28	13.	p. 12 ¶5	The discussion of loss events at the tailings underscores that the facility, including the leak detection system, is functioning properly. In all cases, repairs and mitigation were successful in reducing conductivity to "background" levels, and WAD cyanide to below detection, in the underdrain. KRO continues to use production wells located downgradient of the tailings as its source of drinking water.

22. The increased trends noted in the fact sheet were from the entire period of data for wells TP-1, TP-2. and TP-3. The Department has reexamined monitoring data for these wells over the past three years (January, 2001 to March, 2004). The data was analyzed using Sen's Slope/Mann-Kendall to determine whether there were statistically significant trends. For TP-1, nitrates and TDS did not show a decreasing trend. However, sulfate did show a decreasing trend. For well TP-2 and TP-3, there were no decreasing trends noted for nitrates, sulfates, and TDS.

23. The increased trends noted in the fact sheet were from the entire period of record for well KW1-A. The Department has reexamined monitoring data for well KW1-A over the past three years (January, 2001 to March, 2004). A Sen's Slope/Mann-Kendall analyses was again used to determine whether there were trends noted in the nitrate data for well KW1-A. There is no statistically significant downward trend noted for this time period.

24. Comment noted for possible impacts to wells LF-6 and LF-8. There is a decreasing trend in nitrate concentrations over the past three years for well LF-12. The Department agrees that this is likely attributed to the final reclamation of the waste rock/ore stockpile at the site.

25. Comment noted.

26. See response to comment #9.

27. Comment noted.

28. Comment noted. However, the tailings facility's underdrain system has not prevented these loss events from possibly contributing to degradation of ground water quality at the site.

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TABLE 1
COMMENTS REGARDING FACT SHEET

	No.	Ref.	Comment
29	14.	p. 12 ¶7	Previous SEPA analyses by Ecology have involved extensive public disclosure regarding the potential positive and adverse impacts of the project. Ecology's previous approvals under SEPA are in effect a determination that the project is in the public interest, and provide a clear basis for Ecology to satisfy 173-200-030(2)(c)(i) in allowing permit limits above estimated background levels.
30	15.	p. 13 ¶1	We would emphasize this paragraph, in that Ecology has determined that the minimum requirements of compliance with AKART have been met for the tailings. The environmental requirements for the Key Mill Tailings were approved through SEPA analysis in 1988, and generally include each of the design elements subsequently defined in the 1994 Metal Mining and Milling Act RCW 78.56.100(1)(a)(ii): an engineered liner system, a drainage layer / collection system, and a seepage collection impoundment (in our case a collection tank). In addition, all waste rock and ore stockpiles have been managed consistently with RCW 78.56.100(1)(b)(ii) to prevent the release of heavy metals and acidic drainage, and best management practices (BMPs) have been employed consistent with "Best Management Practices for Reclaiming Surface Mines in Washington and Oregon" and BLM policies (Fact Sheet p. 11 second bullet).
31	16.	p. 14 ¶2, ¶5	The permit and fact sheet do not provide any evaluation of what is "practical" in terms of protection of background water quality. Setting limits at pre-activity levels in practice amounts to a non-degradation standard, under which any change in monitored groundwater quality, even within the GWQS and fully protective of the highest beneficial use (drinking water supply), would indicate non-compliance even though at each stage the facility has been designed, constructed, and operated with full approval from Ecology.
32	17.	p. 14 #1	KRO recommends the appropriate limits be determined after the hydrology/AKART study is complete.
33	18.	p. 15 #3	Ecology should consider using drinking water supply wells on KRO property downstream of the tailings and the K2 Mine as points of compliance, retaining the current monitoring wells at these locations as "early warning" stations.
34	19.	p. 15 ¶2	Consistent with the SEPA analysis conducted for the project, the GWQS should be used as interim permit limits until the AKART study can identify the appropriate concentrations and time frames for meeting long-term water quality goals. As outlined by Ecology in the proposed permit renewal, the AKART study should also address priority areas such as evaluation of available, reasonable technologies that may be applicable at the Key East Waste Rock Pile.
35	20.	p. 15	The comments above apply to proposed permit limits for the Lamefoot Mine as well.

29. Comment noted. The public notice of this permit would also be considered as determination of 'public interest'.

30. For the Key Mill site, Key Open Pits, and K2 mine site, there continues to be ground water criteria exceedences. Therefore, the final permit requires the Permittee to update prevention, control and treatment measures to protect receiving ground water quality.

31. See response to comment #2.

32. See response to comment #2.

33. See response to comment #10.

34. See response to comment #5.

35. See response to comment #2.

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TABLE 1
COMMENTS REGARDING FACT SHEET

	No.	Ref.	Comment
36	21.	p. 15 ¶5	The AKART study under a schedule of compliance should be used to determine what "practical" enforcement limits are for LF-12.
37	22.	p. 16 ¶4	See comment #1, contradiction between "not allow" and "will allow" discharges.
38	23.	p. 17 ¶4	Ecology should clarify what the regulatory basis is for requiring a solid waste plan, and which types of wastes should be covered. KRO will employ BMPs and AKART to protect the beneficial uses of waters of the state, but a non-degradation standard is impractical.
39	24.	Table 3	Ecology uses different time periods for each parameter for a given well when determining what background levels are. For example, at a single well TP-2 Ecology uses 4 years (n=20 samples) for nitrates, less than 1 year for sulfate (n=8), and under 2 years for TDS (n=12). If sulfate and TDS limits were calculated using the same 20 sample periods used to determine nitrate enforcement limits, the sulfate limit would increase from 26mg/L to 198 mg/L and the TDS limit would increase from 679 mg/L to 895 mg/L. Enforcement limits Ecology should use the same "pre-activity" period for each parameter at a given well. KRO is recommending that the enforcement limits in Table 3 be removed from the permit until this issue can be addressed under the schedule of compliance as part of the AKART study.
40	25.	Table 4	KWI-A exhibits seasonal patterns (high in fall, low in spring). Interim limits on this well should consider this seasonality (use 95% distribution of peaks for interim enforcement limits). The calculations should also include the most recent data (since November 2002).
41	26.	Table 4	Where calculated interim limits are below the GWQS, the permit should use the GWQS in order to be consistent with SEPA analysis conducted previously (nitrate – K2-2, TP-1; sulfate – TP-1, TP-2).
42	27.	Table 5	Except for LF-12, which represent interim limits, the enforcement limits for Lamefoot should be removed from the permit until long-term practicality can be addressed under the schedule of compliance as part of the AKART study.

36. See response to comment #2.

37. See response to comment #16.

38. The regulatory basis for requiring a solid waste control plan can be found in RCW 90.48.080, which makes it unlawful "…to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharged into such waters any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of the department…"; and WAC 173-216-110(1)(f) which states that permits may contain "…any conditions necessary to prevent and control pollutant discharges from plant site runoff, spillage or leaks, sludge or waste disposal, or raw material storage".

The types of solids wastes covered in the plan should include all solid wastes with the exception of those solid wastes regulated by Chapter 173-303 WAC (Dangerous Waste Regulations).

39. See response to comments #8 and #2.

40. Interim ground water limits have been recalculated in the final permit (data included up to March, 2004).

41. See response to comment #2.

42. The Department believes that the preactivity/background water quality for the Lamefoot site are attainable. Therefore, these limits will be retained in the final permit. See also response to comment #2.

COMMENTS TO SWDP 8033, KINROSS GOLD CORPORATION	RESPONSES

TABLE 2
SPECIFIC COMMENTS ON DRAFT PERMIT ST8033

	№	Ref.	Comment
43	1.	p. 1	As noted in our comments on the Fact Sheet, there is contradictory and confusing language related to whether discharges are allowed under this permit.
44	2.	p. 5 S1.C	This table should be modified to reflect the anti-degradation approach outlined by KRO in our comments above: • Calculated interim limits should be replaced with GWQS for the following wells and parameters: nitrate – K2-2, TP-1; sulfate – TP-1, TP-2, LF-12; • Calculations for interim limits should consider the most recent data, since November 2002; • Interim limits for KW1-A should consider the observed seasonality (use 95% distribution of peaks for interim enforcement limits); • For the remaining wells not included in the proposed draft of this table, GWQS should apply as interim enforcement limits (K2-1, TP-3, Lamefoot wells besides LF-12).
45	3.	p. 6 S1.D	The permit should not establish final ground water quality limitations until the appropriate AKART study has been completed to determine what is "practical" in terms of long-term enforcement limits and time frames for meeting those limits. Once defined, these long-term limits should be considered as targets for reclamation and closure. The table of proposed limits under this condition should be removed until that study is complete.
46	4.	p. 7 S2.A	The operational data collected at the tailings pond to date clearly demonstrate that WAD cyanide and pH do not vary significantly from day to day, and in fact week to week. The frequency of sampling for these parameters in the pond should be reduced to once/week or once/month.
47	5.	p. 7 S2.A	The revised parameter list represents a significant expansion in scope and cost compared with the existing permit. The Fact Sheet does not present a regulatory or technical rationale for adding these new parameters. The added monitoring parameters should be removed from the permit. This comment also applies to condition S2.B.

43. See response to comment #16.

44. See response to comment #2 and #15. Interim limits for well KW1-A have been calculated using the entire data set.

45. See response to comment #2.

46. The Department has reviewed the monitoring data for the tailings pond. Monitoring frequency for WAD cyanide and pH have been reduced to twice per week.

47. The monitoring parameters and frequencies for the K2 mine water, tailings pond water, and underdrain water are required to fully characterize these wastestreams.

COMMENTS TO SWDP 8033, KINROSS GOLD CORPORATION	RESPONSES

TABLE 2
SPECIFIC COMMENTS ON DRAFT PERMIT ST8033

	№	Ref.	Comment
48	6.	p. 9 S2.C	It is not clear what is meant by "discharging" for K2 mine water, as Ecology does not currently allow discharge to infiltration ponds. It does not make sense to conduct extensive compliance monitoring if and when mine water is trucked to the Key Mill Tailings for evaporation. At the same time, KRO is currently developing for submittal supplemental information requesting approval to re-infiltrate non-impacted groundwater encountered in the K2 workings (this water is encountered and isolated in an inactive part of the mine separately from areas where blasting and mining are occurring). KRO has also commissioned studies to evaluate treatment and permitting alternatives for "impacted" mine water containing nitrates and TSS. The parameters and monitoring in this table may be appropriate if Ecology approves either of these two initiatives, but the table should be removed (or addressed under the general monitoring plan, not as a compliance condition) if the requirement continues to be trucking the water to tailings.
49	7.	p. 11 S3.E	As written, the noncompliance notification requirements could trigger inappropriate response any time a sample result is marginally above enforcement limits, whether as a result of lab error or natural variability. A more practical approach would be to require immediate resampling and confirmation of any sample results that are above enforcement limits; immediate notification to the Department if the re-sample confirms the non-compliance; take immediate steps to identify and where possible address the source of any confirmed non-compliance; and submit a report within 30 days of re-sampling describing the event and any follow-up actions to be taken.
50	8.	p. 17 S8.C	The permit or fact sheet should clarify the regulatory basis for submittal of a waste control plan, and which wastes are to be covered.

48. The 'discharging' for the K2 mine water in the proposed permit referred to the discharge of the mine water to the tailings impoundment. The final permit has included language stating that this condition does not apply to the intercepted ground water from the K2 mine that is infiltrated onsite.

49. The Department has not changed the language for S3.E in the final permit. If a sampling result is marginally above an enforcement limit, whether from lab error or natural variation, this belief can be stated in the noncompliance notification. Further, the noncompliance notification can include a statement that the "corrective action taken and/or planned, steps to be taken to prevent a recurrence" will be made after receiving the re-sampling results.

50. See response to comment #38.

COMMENTS TO SWDP 8033, KINROSS GOLD CORPORATION	RESPONSES

CENTER for SCIENCE in PUBLIC PARTICIPATION
224 North Church Avenue, Bozeman, MT 59715
Phone (406) 585-9854 / Fax (406) 585-2260 / web: www.csp2.org / e-mail: csp2@csp2.org
"Technical Support for Grassroots Public Interest Groups"

November 14, 2003

Department of Ecology
Attn: Water Quality Permit Coordinator
4601 N. Monroe
Spokane, WA 99205-1295

Re: Proposed Industrial Wastewater Permit Number ST 8033 to Echo Bay Minerals

I would like to follow the progress of the hydrogeologic/engineering report updating and evaluating all known available and reasonable methods of prevention, control and treatment (AKART) for sources contributing pollutants that degrade ground water quality as measured by wells K2-2, TP-1, TP-2, KW-1A, and LF-12, and the ground water remediation alternatives for ground water contamination as measured by wells K2-2, TP-1, TP-2, KW-1A, and LF-12.

The compliance section of the Draft Permit indicates this report is to completed 1 year after permit effective date.

51 I would appreciate it if you would put me on your mail/e-mail notice list for the completion of this report.

Hopefully you will be able to put the full report on your website so it will be publicly available.

Thank you for the opportunity to comment on this permit.

Sincerely;

David M. Chambers, Ph.D.

NOV 17 2003

51. The Department will send a copy of the AKART report to you when completed.

COMMENTS TO SWDP 8033, KINROSS GOLD CORPORATION	RESPONSES

CONCERNED • INFORMED • EMPOWERED

Okanogan Highlands Alliance

Pure Water is more Precious than Gold!

P.O. Box 163 Tonasket WA 98855

RECEIVED
NOV 19 2003
DEPARTMENT OF ECOLOGY

November 14, 2003

Department of Ecology
Attn: Water Quality Permit Coordinator
4601 N. Monroe
Spokane, WA 99205-1295

Re: Proposed Industrial Wastewater Discharge Permit Number ST 8033 to Echo Bay Minerals

On behlf of the Okanogan Highlands Alliance I would like to follow the progress of the hydrogeologic/engineering report updating and evaluating all known available and reasonable methods of prevention, control and treatment (AKART) for sources contributing pollutants that degrade ground water quality as measured by wells K2-2, TP-1, TP-2, KW-1A, and LF-12, and the ground water remediation alternatives for ground water contamination as measured by wells K2-2, TP-1, TP-2, KW-1A, and LF-12.

The compliance section of the Draft Permit indicates this report is to completed 1 year after permit effective date.

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Hopefully you will be able to put the full report on your website so it will be publicly available.

Thank you for the opportunity to comment on this permit.

Sincerely,

David Kliegman

52. The Department will send a copy of the AKART report to you when completed.